

Appl. No. : 09/847,598
Filed : May 2, 2001

REMARKS

By this paper, the specification has been amended. Claims 5, 6, 9, 12, 17, 18, 23 and 24 are amended, Claims 1-4, 7-8, 10-11, 13-16, 19-22 and 25-27 are canceled, and new Claims 28-56 are added. After entry of the foregoing amendments, Claims 5, 6, 9, 12, 17, 18, 23, 24, and 28-56 are pending in the application. Consideration and allowance of the claims in light of the present remarks is respectfully requested.

The specific changes to the specification and claims are shown on separate pages attached hereto and entitled **VERSION WITH MARKINGS TO SHOW CHANGES MADE**, which follows the signature page of this Amendment. On these pages, the insertions are double underlined while the deletions are struck through.

The specification has been amended to include the application number of the related application. Claims 14 and 20 were objected to because of informalities. Claim 14 has been canceled. The antecedent basis problem for Claim 20 has been corrected. Claim 20 has been combined with Claims 23 and 24 as amended Claims 23 and 24.

Discussion of the Rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a)

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Bierma (WO 91/11134). Claim 1 has been canceled, without prejudice.

Claims 2-8 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma (WO 91/11134) as applied to Claim 1, and further in view of Kinto et al. (U.S. Patent No. 6,142,252). Claims 13, 15-16, 19-22 and 25-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma (WO 91/11134) in view of Kinto (U.S. Patent No. 6,142,252). Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma and Kinto as applied to Claim 13, and further in view of Buchanan (U.S. Patent No. 1,130,064). Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma and Kinto as applied to Claim 13, and further in view of Bartsch (U.S. Patent No. 6,459,955). Claim 27 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma and Kinto as applied to Claim 20, and further in view of Silvenis (U.S. Patent No. 5,092,699). Claim 9 was rejected under 35 U.S.C. § 103(a) as being

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unpatentable over Bierma (WO 91/11134) as applied to Claim 1, and further in view of Bartsch (U.S. Patent No. 6,459,955). Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bierma (WO 91/11134) as applied to Claim 1, and further in view of Ueno (JP 11-178765).

Claims 1-4, 7-8, 10-11, 13-16, 19-22 and 25-27 have been canceled, without prejudice, by this amendment. Claim 1 has been combined with Claims 2, 4 and 5 as amended Claim 5. The Bierma patent application is directed to a non-autonomous mopsweeping apparatus that is ridden or guided by a human. In contrast, amended Claim 5 recites “the autonomous cleaning robot offloads the web after it has been soiled”. This is supported at least at page 8, lines 13-17 and page 10, lines 9-13 of the specification. Neither Bierma, Kinto, nor the other cited references describe an autonomous robot that offloads the web outside the confines of the robot after the web has been soiled, and therefore, the amended claim is deemed allowable.

Claim 1 has been combined with Claim 6 as amended Claim 6. The Examiner stated that Bierma discloses “the pressing means is made from metal or steel and the endless belt is made of a porous resilient material (pg. 4, lines 17-20), where a porous resilient material is interpreted to be non-absorbent” (emphasis added). However, Applicant claims “the pad is compliant and non-absorbent”. The American Heritage Dictionary, Second College Edition, defines *porous* as “admitting the passage of gas or liquid through pores or interstices”, and *absorb* as “to take in through or as through pores or interstices”. Therefore, a porous material is absorbent, which is not shown by the reference, and therefore, the amended claim is deemed allowable.

Claim 1 has been combined with Claim 9 as amended Claim 9, and Claim 13 has been combined with Claim 17 as amended Claim 17. The Examiner stated that Bartsch describes “a cleaning apparatus where the entire apparatus is waterproof”, where the entire cover would also encase the roll of web, thereby preventing the roll from getting wet. This is in direct contrast to Applicant’s Claim 9 (and similarly for Claim 17) that includes the limitations: “wherein the roll of webbing is encased in a watertight compartment” and “a housing to enclose the motor system, the first roller and its watertight compartment, the second roller, ...”. The housing encloses the various components of the assembly including the first roller and its watertight compartment, where the roll of web remains wet between uses as described at page 8, lines 6-10 of the

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specification. Because the reference does not describe the watertight compartment for the first roller being itself inside another housing, like Russian dolls, the amended Claims 9 and 17 are deemed allowable.

Therefore, in view of the above, the cited references do not disclose the above-recited limitations and the claims are deemed patentable.

Allowable Subject Matter

Claims 12, 18, 23 and 24 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim as indicated in the Notice of Allowance mailed October 11, 2002. Applicant has rewritten Claims 12, 18, 23 and 24 accordingly, and therefore, Claims 12, 18, 23 and 24 are deemed allowable.

New Claims

Applicant desires claims in different categories and/or scope so as to properly protect the invention. Therefore, new Claims 28-56 have been added. These new claims incorporate similar patentable features to the previous claims. Support for the separately housed master controller is provided by Figure 5 and page 9 of the specification. For Claim 49, the autonomous master controller transmits control signals to the floor mopping device which moves based on the received signals.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that claims of the above-identified application are in condition for allowance. However, if the Examiner finds any further impediment to allowing all claims that can be resolved by telephone, the Examiner is respectfully requested to call the undersigned.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 1/13/03

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph at page 1, line 8 has been amended as follows:

This patent application is related to U.S. Patent Application No. 09/847,600 for "APPARATUS AND METHOD FOR IMPROVING TRACTION FOR A MOBILE ROBOT", concurrently filed May 2, 2001, and which is hereby incorporated by reference.

In the Claims:

Claims 5, 6, 9, 12, 17, 18, 23 and 24 have been amended as follows:

5. (AMENDED) The assembly of Claim 4, A floor mopping assembly, comprising:
a first roller configured to let out a web mounted on a roll;
a second roller configured to reel in the web;
a motor system configured to cause transfer of the web between the first roller and the second roller;
a pad configured to press the web against a surface; and
a housing to enclose the motor system, the first roller, the second roller and the pad, wherein the motor system, the first and second rollers, and the pad are mounted in the housing such that the motor causes transfer of the web between the first and second rollers and between the pad and the surface, and
wherein the housing is part of an autonomous cleaning robot, and wherein the autonomous cleaning robot disposes of offloads the web after it has been soiled.

6. (AMENDED) The assembly of Claim 4 A floor mopping assembly, comprising:
a first roller configured to let out a web mounted on a roll;
a second roller configured to reel in the web;

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a motor system configured to cause transfer of the web between the first roller and the second roller;

a pad configured to press the web against a surface, wherein the pad is compliant and non-absorbent; and

a housing to enclose the motor system, the first roller, the second roller and the pad, wherein the motor system, the first and second rollers, and the pad are mounted in the housing such that the motor causes transfer of the web between the first and second rollers and between the pad and the surface.

9. (AMENDED) The assembly of Claim 1 A floor mopping assembly, comprising:

a first roller configured to let out a web mounted on a roll, wherein the roll of web is encased in a watertight compartment;

a second roller configured to reel in the web;

a motor system configured to cause transfer of the web between the first roller and the second roller;

a pad configured to press the web against a surface; and

a housing to enclose the motor system, the first roller and its watertight compartment, the second roller, and the pad, wherein the motor system, the first and second rollers, and the pad are mounted in the housing such that the motor causes transfer of the web between the first and second rollers and between the pad and the surface.

12. (AMENDED) The assembly of Claim 1 A floor mopping assembly, comprising:

a first roller configured to let out a web mounted on a roll, wherein the roll of web is encased in a disposable assembly;

a second roller configured to reel in the web;

a motor system configured to cause transfer of the web between the first roller and the second roller;

a pad configured to press the web against a surface; and

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a housing to enclose the motor system, the first roller, the second roller and the pad, wherein the motor system, the first and second rollers, and the pad are mounted in the housing such that the motor causes transfer of the web between the first and second rollers and between the pad and the surface.

17. (AMENDED) The assembly of Claim 13 A floor mopping assembly, comprising:
a computerized mobile chassis;
a first roller configured to let out a roll of webbing, wherein the roll of webbing is encased in a watertight compartment;
a second roller configured to reel in the webbing; and
a motor system configured to cause transfer of the webbing between the first roller and the second roller, wherein the motor system, the first roller and its watertight compartment, and the second roller are conveyed by the chassis.

18. (AMENDED) The assembly of Claim 13 A floor mopping assembly, comprising:
a computerized mobile chassis;
a first roller configured to let out a roll of webbing, wherein the roll of webbing is encased in a disposable assembly;
a second roller configured to reel in the webbing; and
a motor system configured to cause transfer of the webbing between the first roller and the second roller, wherein the motor system and the first and second rollers are conveyed by the chassis.

23. (AMENDED) The method of Claim 20 A method of mopping a surface with a floor mopping device, the method comprising:
a) connecting a roll of webbing on a feed roller to a take-up roller;
b) moving the floor mopping device without human intervention;
c) pressing on a portion of the webbing such that the webbing cleans a surface;
and
d) transferring the portion of the webbing to the take-up roller, wherein the transferring includes determining when the webbing is soiled.

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24. (AMENDED) ~~The method of Claim 20~~ A method of mopping a surface with a floor mopping device, the method comprising:

- a) connecting a roll of webbing on a feed roller to a take-up roller;
- b) moving the floor mopping device without human intervention;
- c) pressing on a portion of the webbing such that the webbing cleans a surface;

and

d) transferring the portion of the webbing to the take-up roller, wherein the transferring includes determining when the mopping device has cleaned a predetermined area of the surface.

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